

Work Order ID 147860

Friday, June 17, 2016 8:21:05 AM

147860

Page 1

Item ID: D412-742-043**Accept*****N900040100*****Setup Start*****NS1*****Revision ID:****Stop*****NS2*****Item Name:** Repl. Skidtube Fits LH or RH, High Gear, DART (Apical) Tri-Bag Float Comp.**Start Date:** 6/21/2016 **Start Qty:** 1.00***1*****Cust Item ID:****Required Date:** 7/4/2016 **Req'd Qty:** 1.00***1*****Customer:****Reference:****Approvals:** **Process Plan:** MLJ **Date:** JUN 17 2016**Tooling:****Date:****Run Start*****NR1*****QC:****Date:****SPC (Y/N):****Date:****Stop*****NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
Draw Nbr	Revision Nbr								
D3391	J								

100

Document Control

0.00

100

DOCUMENT CONTROL

DC

Memo

0.00

Doc.Control -USB or Paperwork

If D412-742-043 is a W/O on it's own,
Photocopy bluefile and create labels per PPP D412-742-043 CHG007

N/A

DAS
21
9-88

JAN 26 2017

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐			
Date : _____	Step #: _____	QTY Effective : _____		MRB (QSI042) Approval	
Description Work Order Deviation		Disposition		Completed By	
				Lead hand / Supervisor Approval Verification	
				QC / QA Coordinator Approval	
Root Cause		FAULT CATEGORY			
Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐	No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐	Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐	Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐	Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Misabeled ☐ Fit/Function ☐ Misaligned/off center ☐	Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐
OTHER : _____					

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Item ID: D412-742-043**Accept*****N900040100*****Setup Start*****NS1*****Revision ID:****Stop*****NS2*****Item Name:** Repl. Skidtube Fits LH or RH, High Gear, DART (Apical) Tri-Bag Float Comp.**Start Date:** 6/21/2016 **Start Qty:** 1.00***1*****Cust Item ID:****Required Date:** 7/4/2016 **Req'd Qty:** 1.00***1*****Customer:****Reference:****Approvals:** **Process Plan:** _____ **Date:** _____ **Tooling:** _____ **Date:** _____**Run Start*****NR1*****QC:** _____ **Date:** _____ **SPC (Y/N):** _____ **Date:** _____**Stop*****NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
110		0.00							
110	HandFinishing								
HandFinish	Memo	0.31							
Hand Finishing	1-Install tubes together and seal them all the way around using Sikaflex 241/291. Ensure tube ends line-up with saddle holes for proper alignment. using 7/16" "T" Pins. A/RSikaflex-241/-291 <u>M1136043</u> Expiry date: <u>12/09</u>								
	2-Install wearplates as per Dwg D3391. Ensure that plastic washers are against wearplate, then topped with the SS washer. Seal all bolts with sikaflex except ones with inserts on inside of tube ,hand tighten only bolts with no sikaflex. A/RSikaflex-241/-291 <u>M1136043</u> Expiry date: <u>12/09</u>								
	3-Remove "T" pins once sikaflex is dry.								
	4-Coat all exposed hardware with LPS Procyon. Remove any excess off with MEK degreaser. A/RLPS Procyon <u>M1133690</u>								

* verify FWD SADDLE Fitment During Assembly _____

* verify aft SADDLE Fitment During Assembly _____

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

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Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐			
Date : _____	Step #: _____	QTY Effective : _____		MRB (QSI042) Approval	
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				QC / QA Coordinator Approval	
Root Cause		FAULT CATEGORY			
Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐	No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐	Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐	Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐	Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Misabeled ☐ Fit/Function ☐ Misaligned/off center ☐	Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐
OTHER : _____					

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Item ID: D412-742-043 **Accept** ***N900040100*** **Setup Start** ***NS1***
Revision ID: **Stop** ***NS2***
Item Name: Repl. Skidtube Fits LH or RH, High Gear, DART (Apical) Tri-Bag Float Comp.
Start Date: 6/21/2016 **Start Qty:** 1.00 ***1*** **Cust Item ID:**
Required Date: 7/4/2016 **Req'd Qty:** 1.00 ***1*** **Customer:**
Reference:

Approvals: **Process Plan:** _____ **Date:** _____ **Tooling:** _____ **Date:** _____ **Run Start** ***NR1***
QC: _____ **Date:** _____ **SPC (Y/N):** _____ **Date:** _____ **Stop** ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
120 *120* QC Quality Control	QC5- Inspect part completeness to step on W/O Memo	0.00 0.00				1			DAS 38 9-89 JAN 24 2017
130 *130* Packaging Packaging	Packaging Memo Identify and pack for shipping as per PPP D412-742-043 Location: _____ PPP Rev: _____	0.00 0.00							DAS 27 9-89 JAN 25 2017
140 *140* QC Quality Control	QC21- Final Inspection - Work Order Release Memo	0.00 0.02							DAS 21 9-89 JAN 26 2017 ME 17-1-26

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :			MRB (QSI042) Approval 		
Description Work Order Deviation				Disposition					
								Completed By	
								Lead hand / Supervisor Approval Verification	
								QC / QA Coordinator Approval	

Root Cause			FAULT CATEGORY		
Environment ☐	No Re-verification ☐	Pressure/Forced ☐	Temperature/Cure ☐	Power Loss/Surge ☐	Positioned Wrong ☐
Design ☐	Operator ☐	Bending ☐	Set-up ☐	Folio/Program ☐	Outside Dimensions ☐
Doc/Data ☐	Offset/Setup ☐	Centre Not Concentric ☐	BOM/Route ☐	Grain ☐	Over/Under tolerance ☐
Equip/Tooling ☐	Supplier ☐	Cracks ☐	Broken/Damage/Defect ☐	Weld ☐	Part Incorrect ☐
Handling/Pre ☐	Training ☐	Crimp/Kink/Ripple/Wave ☐	Inspection Incomplete/Unqualified ☐	Wrong Stock Pulled ☐	Part Lost/Missing ☐
Material ☐	Use for Testing ☐	Cuffs ☐	Contamination ☐	Out of Sequence ☐	Part Moved ☐
Internal Transport ☐	Poor Information ☐	Crushing ☐	Countersink ☐	Off-set ☐	Drawing ☐
Tribal Knowledge ☐	Rushing ☐	Heat Treat ☐	Cut Too Short ☐	Mislabeled ☐	Finish ☐
LOA ☐	Product Improvement ☐	Wave/Twist in Tube ☐	Instructions Incomplete/Unclear ☐	Fit/Function ☐	Misread ☐
Substation ☐	Process Improvement ☐	Marks/Chatter ☐	Drill Holes ☐	Misaligned/off center ☐	Turning Sequence ☐
Past Expiry Date ☐	Manufacturing Process ☐	OTHER : _____			
Misidentified ☐	Past Due ☐				

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1 47860

D412-742-043

Required Date: 7/4/2016

Required Qty: 1.00

Comments: IPP Rev A 05.10.13 New Issue KJ/JLM
 IPP Rev 06.02.13 ECN 773 dwg @ rev.D EC
 IPP Rev:C 07-05-28 As per Rev F JLM
 IPP Rev:D 07-12-04 ECN 1072 DD verified by:JLM
 IPP Rev:E 08-09-08 ecn 08-510 DD verified by:EC IPP Rev:F
 11.11.01 as per DSI9517 REV.B DD verified by:EC IPP REV:G 16.05.02
 AS PER DWG REV.J DD VEF:JLM

AN5C7A
BOLT

11/10/23

<u>Location</u>	<u>Loc Qty</u>	<u>Loc Code</u>
FG	2	
19185	2	
over003	150	
m131320	150	
ST338	141	
m131139	7	M135704
m132123	34	
m132930	100	

M135704

X1C

D3391-021

B 149 713 (14) 17/10/23

Fwd Tube Assembly

DQA: _____ Date: _____

WORK ORDER NON-CONFORMANCE / UPDATE



QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐			
Date : _____	Step #: _____	QTY Effective : _____		MRB (QSI042) Approval	
Description Work Order Deviation		Disposition			
				Completed By	
				Lead hand / Supervisor Approval Verification	
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Root Cause		FAULT CATEGORY			
Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐	No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐	Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐	Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐	Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Mislabeled ☐ Fit/Function ☐ Misaligned/off center ☐	Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐
OTHER : _____					

Picklist Print

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Work Order ID: 147860

147860

Parent Item: D412-742-043

D412-742-043

Parent Item Name: Repl. Skidtube Fits LH or RH, High Gear, DART (Apical) Tri-Bag Float Comp.

Start Date: 6/21/2016

Required Date: 7/4/2016

Start Qty: 1.00

Required Qty: 1.00

NAS1149C0532R

Purchased

No

110

Each

335.0000

10

10

NAS1149C0532R

WASHER

ell 17/01/23

Location

Loc Qty

Loc Code

GA

60

116513

60

M135390

x10

ST266

275

m133031

75

m134756

200

D3391-023

Manufactured

No

110

Each

0.0000

1

1

D3391-023

Mid Tube Assembly

B152843 (W) ell 17/01/23

D3391-025

Manufactured

No

110

Each

0.0000

1

1

D3391-025

Aft Tube Assembly

154467

*mf
17-1-26*

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐			
Date : _____	Step #: _____	QTY Effective : _____		MRB (QSI042) Approval	
Description Work Order Deviation		Disposition		Completed By	
				Lead hand / Supervisor Approval Verification	
				QC / QA Coordinator Approval	
Root Cause		FAULT CATEGORY			
Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐	No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐	Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐	Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐	Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Mislabeled ☐ Fit/Function ☐ Misaligned/off center ☐	Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐
OTHER : _____					

Picklist Print

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Work Order ID: 147860

147860

Parent Item: D412-742-043

D412-742-043

Parent Item Name: Repl. Skidtube Fits LH or RH, High Gear, DART (Apical) Tri-Bag Float Comp.

Start Date: 6/21/2016

Required Date: 7/4/2016

Start Qty: 1.00

Required Qty: 1.00

AN3C4A

Purchased

No

110

Each

1,029.000

24

24

AN3C4A

all 17/01/27

Bolt

<u>Location</u>	<u>Loc Qty</u>	<u>Loc Code</u>	
FG	20		
122814	20	M136648	x24
FP001	703		
M133440	7		
M134396	41		
M134509	6		
M134606	29		
M134676	44		
M134762	576		
OVER002	200		
M134861	200		
ST350	106		
M131420	6		
M132317	3		
M134134	18		
M134396	79		

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DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

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Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐																																																													
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Environment ☐	No Re-verification ☐	Pressure/Forced ☐	Temperature/Cure ☐	Power Loss/Surge ☐	Positioned Wrong ☐	Design ☐	Operator ☐	Bending ☐	Set-up ☐	Folio/Program ☐	Outside Dimensions ☐	Doc/Data ☐	Offset/Setup ☐	Centre Not Concentric ☐	BOM/Route ☐	Grain ☐	Over/Under tolerance ☐	Equip/Tooling ☐	Supplier ☐	Cracks ☐	Broken/Damage/Defect ☐	Weld ☐	Part Incorrect ☐	Handling/Pre ☐	Training ☐	Crimp/Kink/Ripple/Wave ☐	Inspection Incomplete/Unqualified ☐	Wrong Stock Pulled ☐	Part Lost/Missing ☐	Material ☐	Use for Testing ☐	Cuffs ☐	Contamination ☐	Out of Sequence ☐	Part Moved ☐	Internal Transport ☐	Poor Information ☐	Crushing ☐	Countersink ☐	Off-set ☐	Drawing ☐	Tribal Knowledge ☐	Rushing ☐	Heat Treat ☐	Cut Too Short ☐	Mislabeled ☐	Finish ☐	LOA ☐	Product Improvement ☐	Wave/Twist in Tube ☐	Instructions Incomplete/Unclear ☐	Fit/Function ☐	Misread ☐	Substation ☐	Process Improvement ☐	Marks/Chatter ☐	Drill Holes ☐	Misaligned/off center ☐	Turning Sequence ☐	Past Expiry Date ☐	Manufacturing Process ☐	OTHER : _____			
Misidentified ☐	Past Due ☐																																																																

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Parent Item: D412-742-043

D412-742-043

Parent Item Name: Repl. Skidtube Fits LH or RH, High Gear, DART (Apical) Tri-Bag Float Comp.

Start Date: 6/21/2016

Required Date: 7/4/2016

Start Qty: 1.00

Required Qty: 1.00

AN3C6A

Purchased

No

110

Each

238.0000

4

4

AN3C6A

Bolt

all 17/06/23

Location

Loc Qty

Loc Code

CA

31

M136295

x4

m128704

31

FG

10

122416

10

FP001

94

m128769

4

m133363

5

m133990

13

m134762

72

ST338a

6

m133077

6

ST349

97

m132767

4

m133694

1

m134502

92

NAS1149C0332R

Purchased

No

110

Each

4,245.000

28

28

NAS1149C0332R

WASHER

all 17/06/23

Location

Loc Qty

Loc Code

FP001

1136

M136301

x28

m132930

1004

m134073

128

m134574

4

GA

141

m133284

141

ST266

2968

m134654

10

m134736

1958

m134962

1000

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WORK ORDER NON-CONFORMANCE / UPDATE

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Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐			
Date : _____	Step #: _____	QTY Effective : _____		MRB (QSI042) Approval	
Description Work Order Deviation		Disposition			
				Completed By	
				Lead hand / Supervisor Approval Verification	
				QC / QA Coordinator Approval	
Root Cause Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐ No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐		FAULT CATEGORY Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐ Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐ Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Mislabeled ☐ Fit/Function ☐ Misaligned/off center ☐ Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐			
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Work Order ID: 147860

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Parent Item: D412-742-043

D412-742-043

Parent Item Name: Repl. Skidtube Fits LH or RH, High Gear, DART (Apical) Tri-Bag Float Comp.

Start Date: 6/21/2016

Required Date: 7/4/2016

Start Qty: 1.00

Required Qty: 1.00

D4095-041 Manufactured No 110 Each 3.0000 1 1
D4095-041 ** B153993 (1x) del 17/01/23
Wearplate Fwd

Location Loc Qty Loc Code

FP001 1 _____
138304 1 _____
FP002 2 _____
139765 2 _____

D4095-043 Manufactured No 110 Each 6.0000 1 1
D4095-043 ** B15832 (1x) del 17/01/23
Wearplate Aft

Location Loc Qty Loc Code

FP002 6 ¹⁸ _____
139766 3 _____
140674 3 _____

D4095-045 Manufactured No 110 Each 4.0000 1 1
D4095-045 ** B149289 (1x) del 17/01/23
Wearplate Center

Location Loc Qty Loc Code

FP002 4 _____
140675 4 _____

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐			
Date :	Step #:	QTY Effective :		MRB (QSI042) Approval	
Description Work Order Deviation		Disposition			
				Completed By	
				Lead hand / Supervisor Approval Verification	
				QC / QA Coordinator Approval	
Root Cause Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐ No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐		FAULT CATEGORY Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐ Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐ Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Misabeled ☐ Fit/Function ☐ Misaligned/off center ☐ Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐			
OTHER : ☐					

D3391-041/-043 FLOAT SKIDTUBE ASSEMBLY PARTS LIST

QTY -041	QTY -043	PART NUMBER	DESCRIPTION
X	X	D3391-041	FLOAT SKIDTUBE ASSEMBLY
		D3391-043	FLOAT SKIDTUBE ASSEMBLY
1		D3391-011	FWD TUBE ASSEMBLY
1		D3391-013	MID TUBE ASSEMBLY
1		D3391-015	AFT TUBE ASSEMBLY
	1	D3391-021	FWD TUBE ASSEMBLY
	1	D3391-023	MID TUBE ASSEMBLY
	1	D3391-025	AFT TUBE ASSEMBLY
2	2	D3591-1	BUSHING
4		D3672-3	WASHER
1	1	D4095-041	WEARSHOE
1	1	D4095-043	WEARSHOE
1	1	D4095-045	WEARSHOE
1	1	D4095-047	WEARPAD
1	1	D4095-049	WEARPAD
1	1	D4095-051	WEARSHOE
24	24	AN3C4A	BOLT
4	4	AN3C6A	BOLT
10	10	AN5C7A	BOLT
28	28	NAS1149C0332R	WASHER
10	10	NAS1149C0532R	WASHER
4		MS27039C4-12	SCREW
4		NAS1149C0432R	WASHER

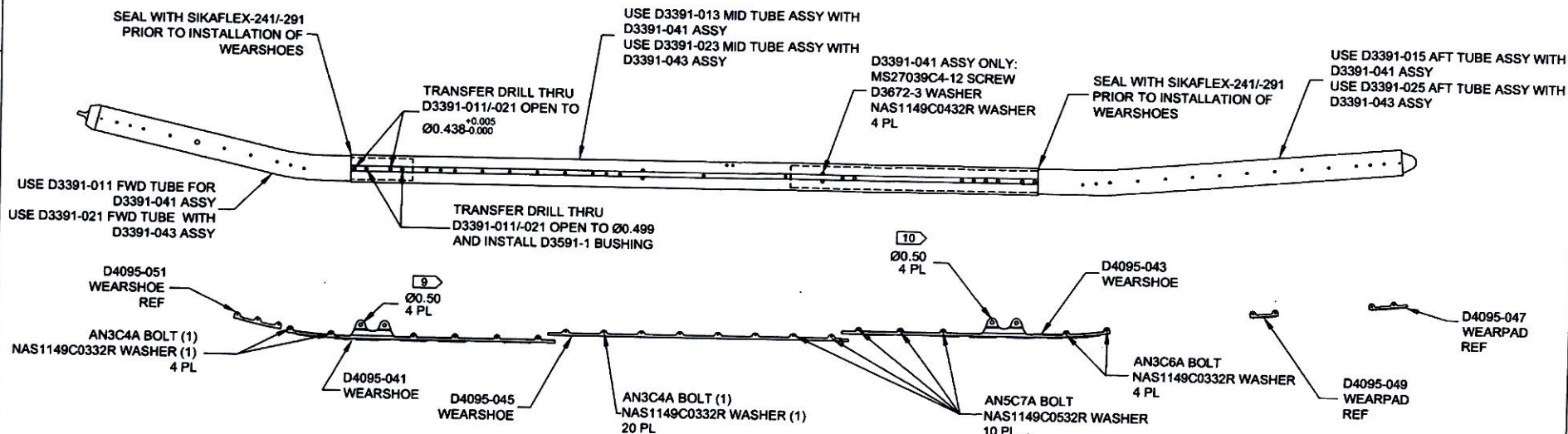
SHOP COPY
RETURN TO
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UNCONTROLLED COPY
SUBJECT TO AMENDMENT

WITHOUT NOTICE
WORK ORDER

NO. 147860 MJS
1606-17

J	INCORPORATED DSI 9733, REFORMAT DRAWING CHANGED CBORE DEPTH (ZN D2-8, D2-9), REVISED TABLES, REPLACED POWDER COAT WITH PAINT	ML	16.01.14
I	REMOVE GASKETS AND REPLACE ALL WEARSHOES; PARTS LIST UPDATE, ZN A8-1, ZN A8-2, ZN A6-4, ZN B6-8; LPS-3 COATING REMOVED FROM NOTE 2, ZN A3-1, ZN A3-2, REMOVED INSERT AELS-1032-130, ZN B6-4, B2-4, C7-8, C3-8; REMOVED HOLES, ZN D6-4 ZN D2-4, ZN D7-8, ZN D3-8	XDF	11.10.13
H	DRAWING UPDATED TO CURRENT STANDARDS. SHT 1 PL ADDED D3591-1 BUSHING. ZN C6 Ø0.438 DIM WAS 4 PL. ADDED Ø0.499 DIM AND D3591-1 BUSHING. SHT 2 PL ADDED D3591-1 BUSHING. ZN C6 Ø0.438 DIM WAS 4 PL. ADDED Ø0.499 DIM AND D3591-1 BUSHING. (FOR FURTHER INFO SEE DSI 9364 & NCR 08-074)	AJS	08.08.20
G	REPLACE NAS INSERTS W/ AELS INSERTS SWITCH TO D3670-XXXX SPACERS FOR INSTALLING FLOAT BAGS, DWG REORGANIZED FOR CLARITY	DC	07.07.31
F	ADD SS WEARSHOE, GASKET REMOVE FWD SADDLE HOLE -011/-021	PH	07.01.18
E	CHANGE TOLERANCE, EASE MANUFACTURE	PH	06.04.25
D	UPDATE TOLERANCE, CHANGE HOLE SIZE	PH	06.01.23
C	LENGTHEN AFT EXTENSION	PH	05.09.27
B	DRAWING UPDATES	PH	05.06.10
A	NEW ISSUE	PH	05.02.07
REV	DESCRIPTION	BY	DATE
DESIGN	PH	DART AEROSPACE USA, INC EUGENE, OR	
DRAWN	ML		
CHECKED	CP	DRAWING NO.	REV. J
MFG. APPR.	CP	D3391	SHEET 1 OF 11
APPROVED	CP	TITLE	SCALE
DE APPR.	CP	412 FLOAT SKIDTUBE	NTS
DATE	16.01.14	COPYRIGHT © 2005 BY DART AEROSPACE USA, INC THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE USA, INC	

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R 2016-04-28
ECN 16-96



D3391-041/-043 ASSY

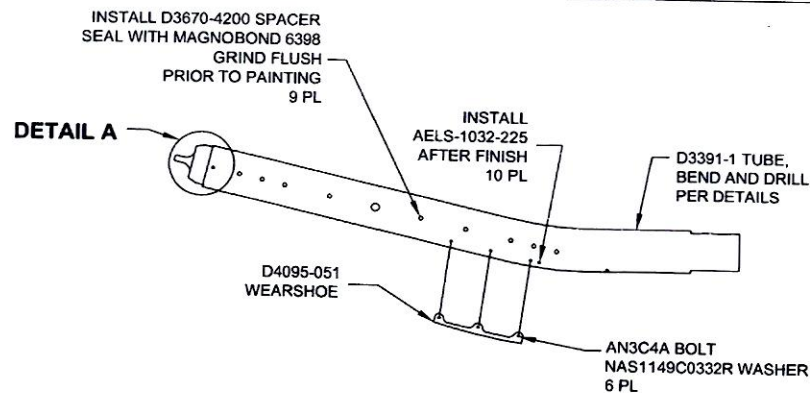


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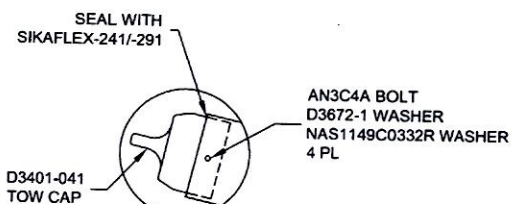
- 1) MATERIAL: N/A
- 2) FINISH: CHEMICAL CONVERSION COAT PER DART QSI 005 4.1
PRIME PER DART QSI 005 4.2.1.3.3
PAINT WHITE PER DART QSI 005 4.2.2.4
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: IDENTIFY PER DART QSI 044 6.6
- 7) WEIGHT: N/A
- 8) COAT ALL EXPOSED FASTENERS WITH LPS "LPS PROCYON"
- 9) FIT D4095-041 TO SKIDTUBE WITH D2571 AND D2572 SADDLES INSTALLED WITH THE APPROPRIATE HARDWARE AND SPACERS IN FORWARD AND AFT HOLES AND TRANSFER DRILL Ø0.50 HOLES FROM SADDLE TO D4095-041
- 10) FIT D4095-043 TO SKIDTUBE WITH D2571 AND D2572 SADDLES INSTALLED WITH THE APPROPRIATE HARDWARE AND SPACERS IN FORWARD AND AFT HOLES AND TRANSFER DRILL Ø0.50 HOLES FROM SADDLE TO D4095-043

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2016-04-28

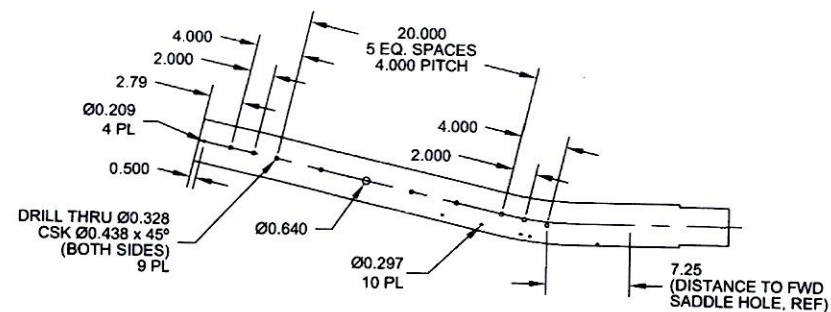
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MFG. APPR.	PP	D3391	SHEET 2 OF 11
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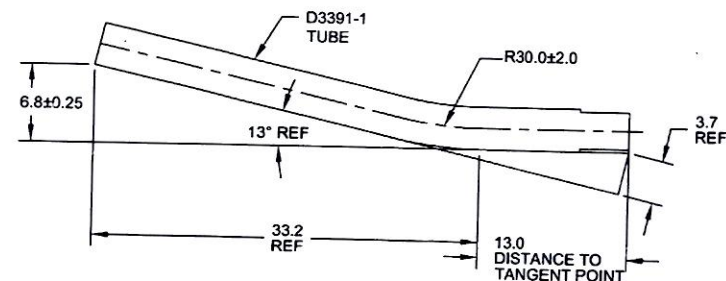
D3391-011 FWD TUBE ASSEMBLY
ASSEMBLY DETAIL



DETAIL A
SCALE 2X



D3391-011 DRILLING DETAIL



D3391-011 BENDING DETAIL
(MAKE FROM D3391-1)

D3391-011 FWD TUBE ASSEMBLY PARTS LIST

QTY -011	PART NUMBER	DESCRIPTION
X	D3391-011	FWD TUBE ASSEMBLY
1	D3391-1	TUBE
1	D3401-041	TOW CAP
9	D3670-4200	SPACER
4	D3672-1	WASHER
1	D4095-051	WEARSHOE
10	AELS-1032-225	INSERT
10	AN3C4A	BOLT
10	NAS1149C0332R	WASHER

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MFG. APPR.		D3391	SHEET 3 OF 11
APPROVED		TITLE	SCALE
DE APPR.		412 FLOAT SKIDTUBE	NTS
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INSTALL D3670-4200 SPACER
SEAL WITH MAGNOBOND 6398
GRIND FLUSH
PRIOR TO PAINTING
4 PL

DETAIL B

D4095-051
WEARSHOE

INSTALL
AELS-1032-225
AFTER FINISH
10 PL

AN3C4A BOLT
NAS1149C0332R WASHER
6 PL

D3391-021 FWD TUBE ASSEMBLY ASSEMBLY DETAIL

SEAL WITH
SIKAFLEX-241/-291

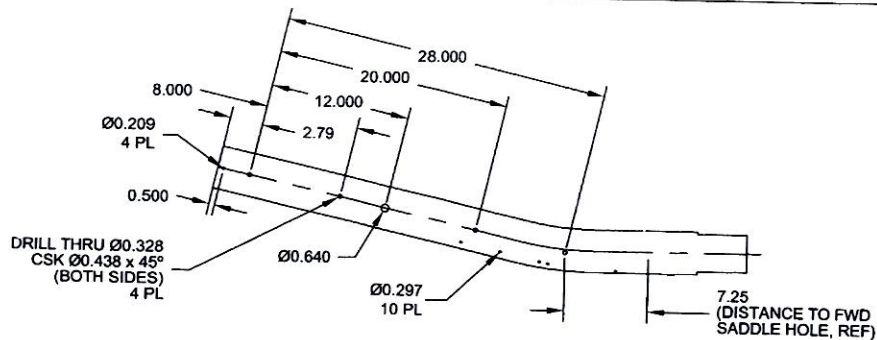
D3401-041
TOW CAP

AN3C4A BOLT
D3672-1 WASHER
NAS1149C0332R WASHER
4 PL

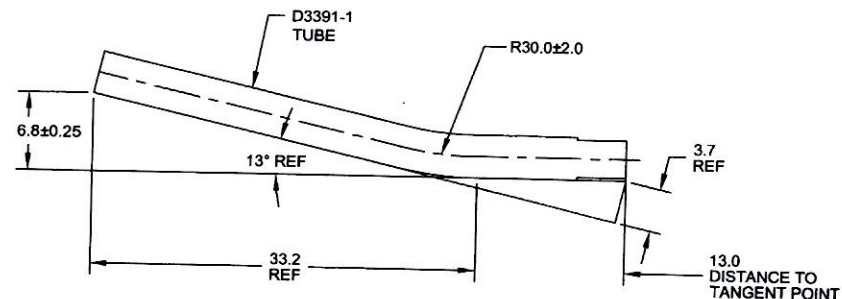
DETAIL B SCALE 2X

D3391-021 FWD TUBE ASSEMBLY PARTS LIST

QTY -021	PART NUMBER	DESCRIPTION
X	D3391-021	FWD TUBE ASSEMBLY
1	D3391-1	TUBE
1	D3401-041	TOW CAP
4	D3670-4200	SPACER
4	D3672-1	WASHER
1	D4095-051	WEARSHOE
10	AELS-1032-225	INSERT
10	AN3C4A	BOLT
10	NAS1149C0332R	WASHER



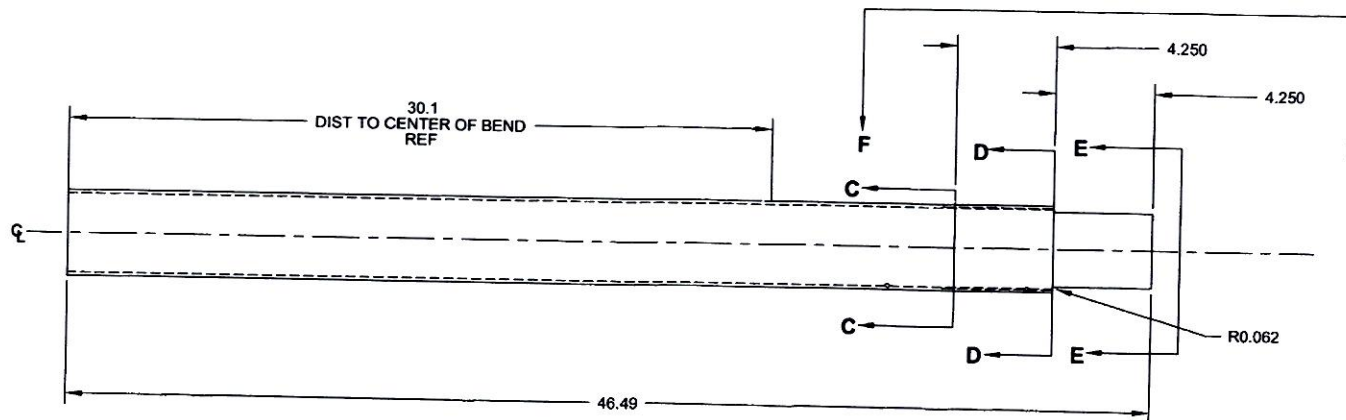
D3391-021 DRILLING DETAIL



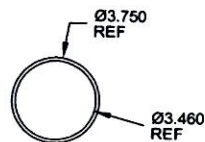
D3391-021 BENDING DETAIL (MAKE FROM D3391-1)

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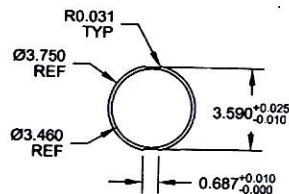
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MFG. APPR.	DE	D3391	SHEET 4 OF 11
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DE APPR.	DE	412 FLOAT SKIDTUBE	NTS
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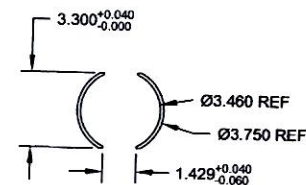
D3391-1 TUBE
(MAKE FROM D6013-047 SKIDTUBE MATERIAL)



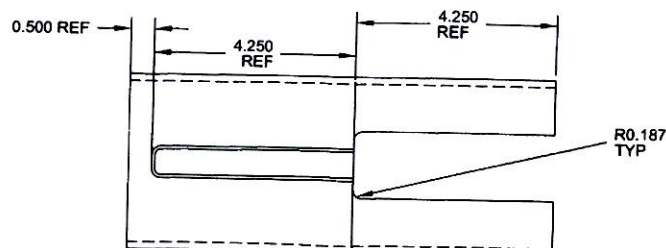
SECTION C-C



SECTION D-D



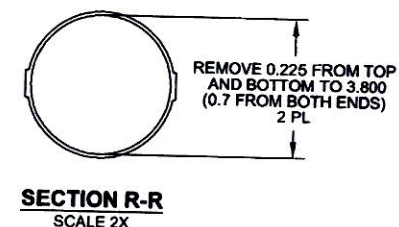
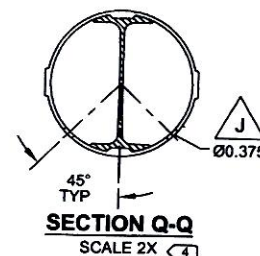
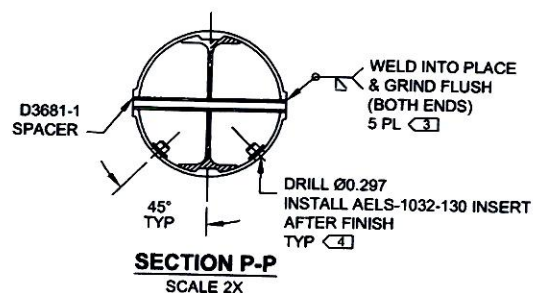
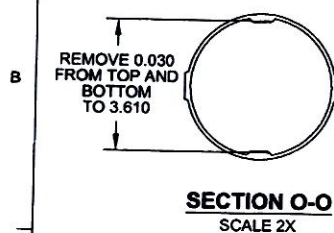
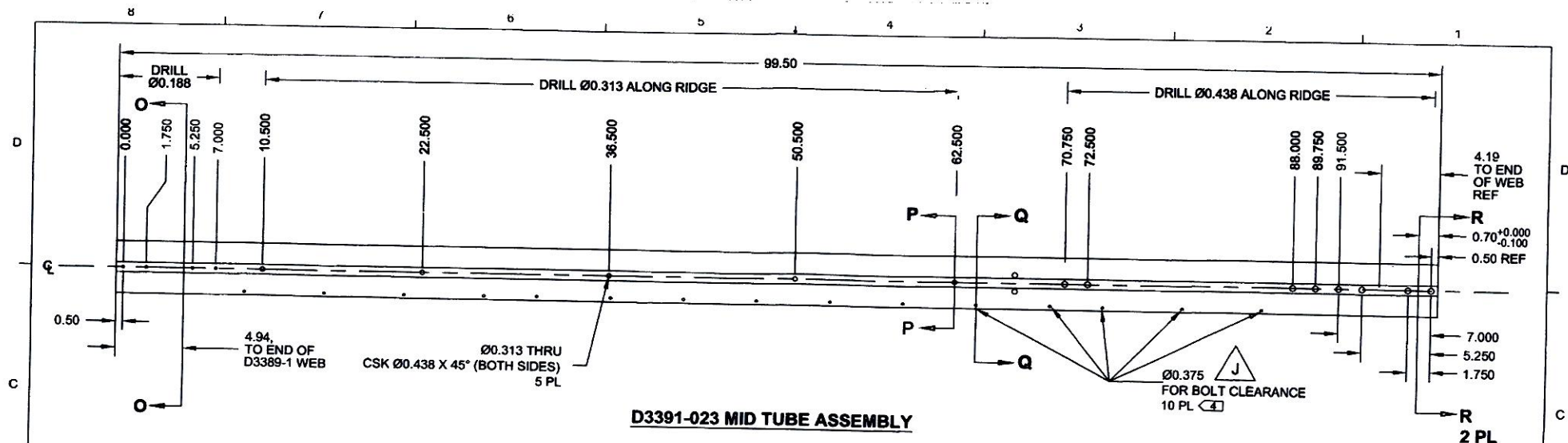
SECTION E-E



VIEW F-F
SCALE 2X

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D3391-023 MID TUBE ASSEMBLY PARTS LIST

QTY	PART NUMBER	DESCRIPTION
X	D3391-023	MID TUBE ASSEMBLY
1	D2500-1-100	EXTRUSION
1	D3389-1	WEB
5	D3681-1	SPACER
20	AELS-1032-130	INSERT

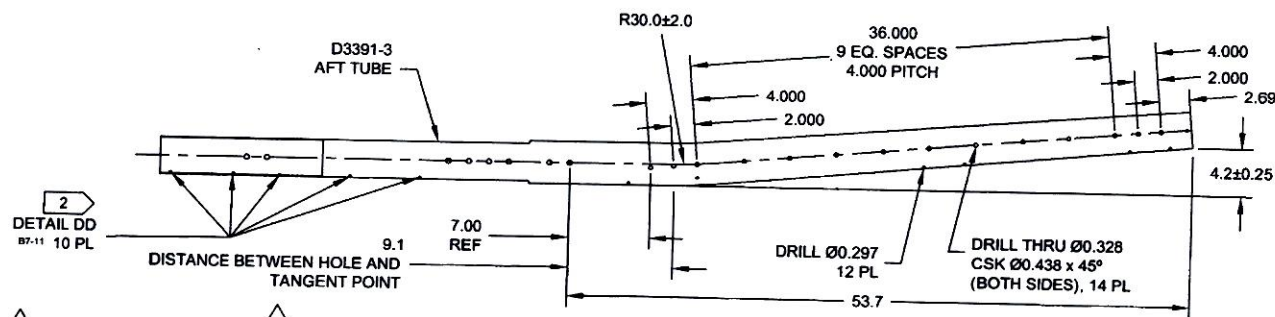
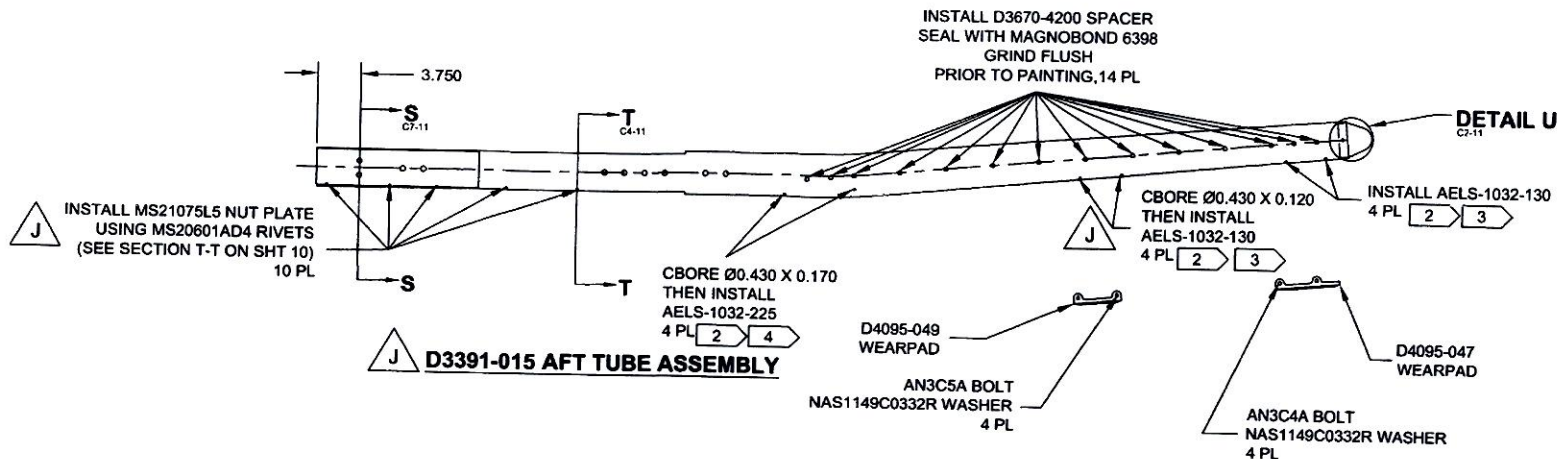


D3391-023 MID TUBE ASSEMBLY

- 1) MATERIAL: MAKE FROM D2500-1-100
- 2) INSTALL D3389-1 WEB TO OUTER TUBE USING SIKAFLEX-241/-291 PER QSI 015
- 3) WELDING: PER DART QSI 004
- 4) USE DART DRILL TEMPLATE DT8217 TO LOCATE AND DRILL Ø0.297 AND Ø0.375 HOLES FOR WEARSHOE INSERTS AND NUTPLATES. CBORER AS NOTED AND INSTALL INSERT/NUTPLATES EXCEPT WHERE INDICATED.

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MFG. APPR.	<i>CP</i>	D3391	SHEET 7 OF 11
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D3391-015 AFT TUBE ASSEMBLY PARTS LIST

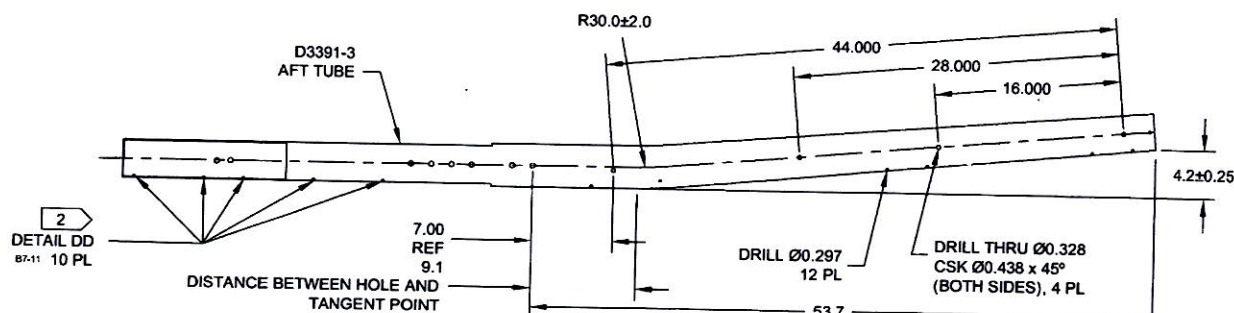
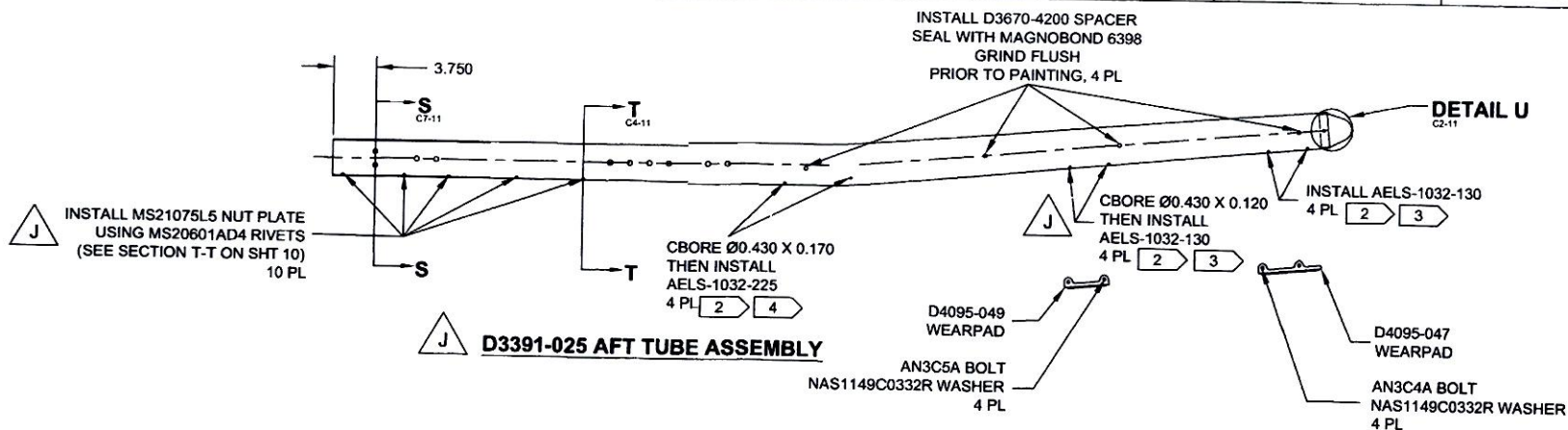
QTY	PART NUMBER	DESCRIPTION
-015		
X	D3391-015	AFT TUBE ASSEMBLY
1	D2646	AFT CAP
1	D3391-3	AFT TUBE
14	D3670-4200	SPACER
2	D3672-1	WASHER
1	D4095-049	WEARPAD
1	D4095-047	WEARPAD
8	AELS-1032-130	INSERT
4	AELS-1032-225	INSERT
4	ALS4-428-165	INSERT
6	AN3C4A	BOLT
4	AN3C5A	BOLT
20	MS20601AD4	RIVET, BLIND
10	MS21075L5	NUT PLATE, FLOATING
10	NAS1149C0332R	WASHER

NOTES:

- 1) COAT ALL EXPOSED FASTENERS WITH LPS "LPS PROCYON"
- 2) USE DART DRILL TEMPLATE DT8217 TO LOCATE AND DRILL Ø0.297 AND Ø0.375 HOLES FOR WEARSHOE INSERTS AND NUTPLATES. C'BORE AS NOTED AND INSTALL INSERT/NUTPLATES EXCEPT WHERE INDICATED.
- 3) ENSURE WALL THICKNESS IS BETWEEN 0.070 AND 0.130 BEFORE INSTALLING INSERT
- 4) ENSURE WALL THICKNESS IS BETWEEN 0.130 AND 0.225 BEFORE INSTALLING INSERT

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MFG. APPR.		D3391	SHEET 8 OF 11
APPROVED		TITLE	SCALE
DE APPR.		412 FLOAT SKIDTUBE	NTS
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D3391-025 AFT TUBE ASSEMBLY PARTS LIST

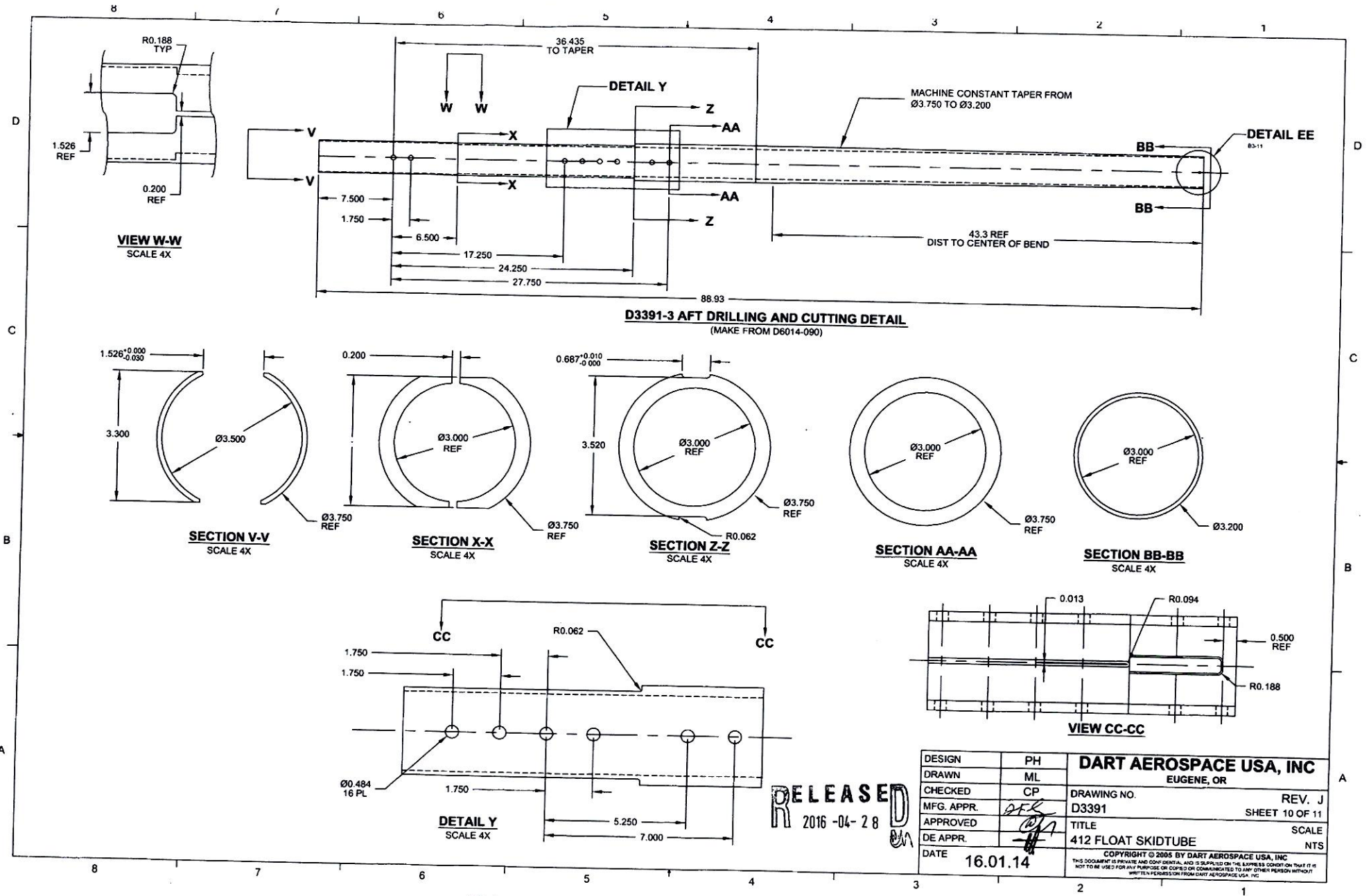
QTY	PART NUMBER	DESCRIPTION
X	D3391-025	AFT TUBE ASSEMBLY
1	D2846	AFT CAP
1	D3391-3	AFT TUBE
4	D3670-4200	SPACER
2	D3672-1	WASHER
1	D4095-049	WEARPAD
1	D4095-047	WEARPAD
8	AELS-1032-130	INSERT
4	AELS-1032-225	INSERT
6	AN3C4A	BOLT
4	AN3C5A	BOLT
20	MS20601AD4	RIVET, BLIND
10	MS21075L5	NUT PLATE FLOATING
10	NAS1149C0332R	WASHER

NOTES:

- 1) COAT ALL EXPOSED FASTENERS WITH LPS "LPS PROCYON"
- 2) USE DART DRILL TEMPLATE DT8217 TO LOCATE AND DRILL Ø0.297 AND Ø0.375 HOLES FOR WEARSHOE INSERTS AND NUTPLATES. CBORE AS NOTED AND INSTALL INSERT/NUTPLATES EXCEPT WHERE INDICATED. USE NUT PLATE DRILL JIG IF REQUIRED.
- 3) ENSURE WALL THICKNESS IS BETWEEN 0.070 AND 0.130 BEFORE INSTALLING INSERT
- 4) ENSURE WALL THICKNESS IS BETWEEN 0.130 AND 0.225 BEFORE INSTALLING INSERT

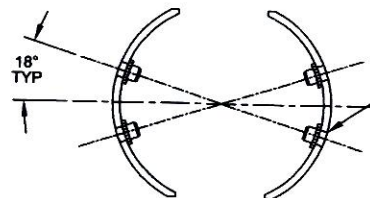
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MFG. APPR.	CP	D3391	SHEET 9 OF 11
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DE APPR.	CP	AFT TUBE ASSEMBLY	NTS
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MFG. APPR.	DFK	D3391	SHEET 10 OF 11
APPROVED	DA	TITLE	SCALE
DE APPR.	DA	412 FLOAT SKIDTUBE	NTS
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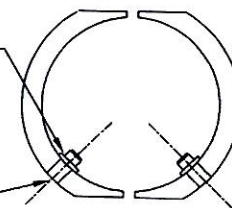


SECTION S-S
SCALE 5X

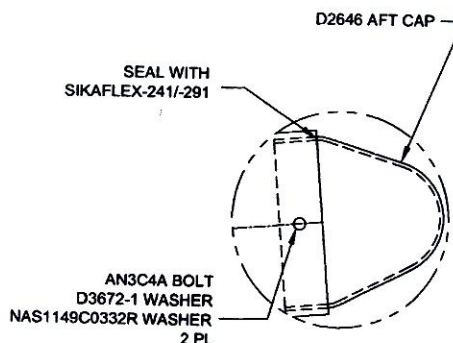
DRILL $\varnothing 0.391$
CBOR $\varnothing 0.516 \times 0.040$ DEEP
INSTALL ALS4-428-165 INSERT
4 PL

USE DT8217 DRILL TEMPLATE
TO LOCATE HOLES AND OPEN
TO $\varnothing 0.375$

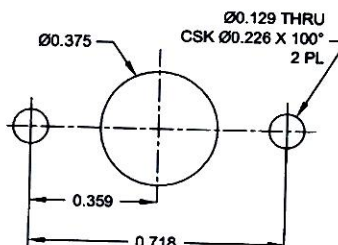
MS21075L5 NUTPLATE
REF



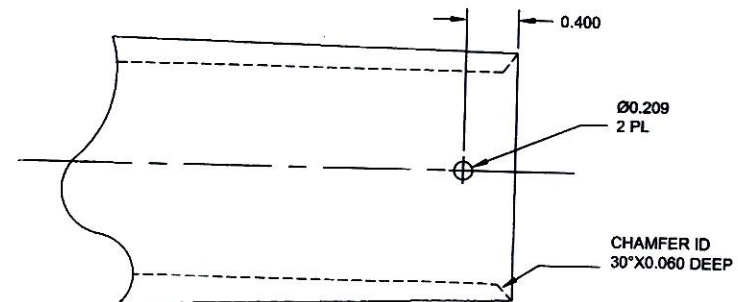
SECTION T-T
SCALE 5X
5 PL



DETAIL U
SCALE 5X



DRILLING DETAIL DD
SCALE 10X



DETAIL EE
SCALE 2X



NOTES:
1) USE INDUSTRY STANDARD NUT PLATE DRILL JIG IF REQUIRED.

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2016-04-28

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CHECKED	CP	DRAWING NO.	REV. J
MFG. APPR.		D3391	SHEET 11 OF 11
APPROVED		TITLE	SCALE
DE APPR.		AFT TUBE ASSEMBLY	NTS
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